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Shinies
by
Seth McCaughey

Submitted in Partial Fulfillment of the
Requirements for the Degree
MASTER OF FINE ARTS

MFA Imaging Arts/Computer Animation
SCHOOL OF FILM AND ANIMATION
ROCHESTER INSTITUTE OF TECHNOLOGY
ROCHESTER, NEW YORK
Sept 2006

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Signature Seth McCaughey

Date: 10/17/06

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My supportive (and patient) thesis committee:

Marla Schweppe (Chair)
Stephanie Maxwell
Johnny Robinson

My persistent family

Sam McCaughey
Nancy McCaughey
Ethan McCaughey

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To these and all others who helped me get here, thank you. I couldn't have done it without all of you.

Seth McCaughey

Pre-Production

The Concept

During my time at RIT, I came to realize that my real interests lay in character animation. I enjoy diving into a character, seeing the world through their eyes and finding all the little psychological and behavioral quirks that really bring them to life. Given these inclinations, then, I decided that what I really wanted to accomplish with my thesis was to get a chance to do some fun, dynamic physical animation with some really interesting characters.

Admittedly, this goal was more than a little vague, and I had a difficult time coming up with a suitable tale to tell. I considered using an existing plot, perhaps from a book of short stories or some such. However, nothing interesting really came to mind. Given the rather limited time frame allotted for the proposal process, spending it all on a quite possibly futile search for an appealing existing story (potentially bringing with it issues of obtaining copyrights) that had not already seen such adaptation did not seem the best course.

I then turned to old concepts and short stories I had written for various classes. A number of them seemed to have some potential, but ultimately they were either too ambitious, being more suitable for a full half hour or hour-long treatment, or else relied too heavily on dialogue. Since my goal was to get a chance to do some interesting physical action, I decided I wanted to do a story that kept dialogue to a bare minimum, relying more on gesture and expression to tell its tale.

In the end I went back to my old standby, and began dredging through old characters for one suitable to craft a story around. While this isn't generally considered

the best way to start a film, it's the one that has always worked for me. I considered a number of characters, but eventually I settled on Chorakh the goblin. Aggressive, deceitful, maliciously playful, and capable of only limited planning and forethought, his feral, Id-driven personality and physically active nature (accentuated by a gangly, awkward anatomy) seemed a good choice for what I had in mind, and he was a character that I felt I hadn't yet made enough use of.

The Treatment

Having settled on Chorakh, it became a matter of finding a suitable story. He was a rather simple, straightforward type of character, and as such could fit into variety of settings. As a fairy tale creature, he carries a hint of magic and the supernatural, but that did not necessarily preclude him from appearing in a more modern story. At one point I was even considering a story (based on suggestions by one of my committee members, Stephanie Maxwell) that had him harassing a late-staying NASA engineer, though in the end I felt I didn't have enough to bring to this story to do it justice. Ultimately I decided to stick with Chorakh's natural setting, which I felt to be a medieval world, deep in an ancient forest.

Next I needed a suitable antagonist. Chorakh's nature meant that he would most likely be the cause of any conflict, so I needed a character likely to fall victim to his antics. Starting from the setting, I created a medieval peasant. I made him a wandering junk trader, his cart of wares broken down while on an old road through the deep forest. I envisioned him as a cowardly Ichabod Crane type, easily frightened and intimidated by the grotesque and threatening goblin, which would harass him and ultimately attempt to steal some bauble from his wares.

With the concept established and given a treatment, I began work on a storyboard. However, shortly after I had completed it, I was in the lab having a conversation with a classmate who was looking for character design suggestions for some fairy women, and I jokingly sketched up an enormously bug-eyed hag dressed in a burlap robe. Later, however, I found myself intrigued by this simple, graphic character, little more than circles and squiggles, and wondered if such a two-dimensional design could be successfully modeled in three dimensions. I took to modeling her as a kind of hobby in my spare time during shifts in the lab, and was so pleased with the result that I decided to redesign my film with the hag (whom I dubbed Grizella) as the antagonist.

This, of course, required a complete re-writing of the story. Instead of a physically able (if scrawny and cowardly) peasant man, Chorakh would be interacting with an apparently frail and senile old woman. Grizella couldn't participate in the chase scenes that had been a part of the original story, and direct physical combat between them was not really an option, since it would be a grossly unfair contest unless Grizella revealed her magic (something I wanted to keep subtle), and I wanted to keep the tone of the piece fairly light.

This last issue was what drove the introduction of the third character in the film, the squirrel. As an avatar and champion of the old hag, the squirrel allowed me to have Chorakh engage her in combat indirectly, as well as remind the audience of his somewhat vicious nature. For his direct interactions, however, I had Chorakh favor bluster (thwarted by the unexplained absence of his target) and stealth.

Storyboarding

Having reworked the story, I began again on the storyboard. Storyboards are, of course, extremely valuable in animation. They allow you work out how the abstract concepts in a story will translate graphically. They also help you work out camera angles and gestures to avoid audience-confusing problems such as poor composition, jump cuts, and 180° rule breaks. Of course, they can also be devilishly difficult at times, as attempting to keep all that in mind and frame shots without cutting yourself off from where you wanted to take the sequence sometimes proves difficult. It is, however, worth it, as a good storyboard allows you to work out the flow and direction of your film before investing time in animation.

For this piece, I tried to favor dynamic compositions incorporating depth, with the character reaching or moving towards or away from the camera, planning to work with fairly wide angle camera settings to further exaggerate this. The goblin's gangly body and long nose worked well with this, (though the latter also caused me a few headaches later on when trying to match the storyboard's composition on facial shots)

Production

Character Design

Since I was coming from a character-centric approach, basic character design actually came very early in the process, preceding story development. Chorakh the goblin, in fact, precedes the start of the film by several years. He was created as part of an exercise in a 2D computer animation class, intended to be the toady of a fantasy style overlord (who went on to become the title character of my first graduate film, Blog the

Terrible). As such, I designed him to be fairly grotesque, giving him large, bulging eyes with beady little pupils, a long, pointed nose and ears, a perpetually grinning mouth filled with big triangular teeth, a hunched spine, and long, gangly limbs ending in sharp claw-like nails. I dressed him only in a ratty pair of short pants held up by a bit of rope.

As you can see from appendices B and C, his design has changed little since then. His eyes became a bit smaller and less bulging, and the pupils larger and less beady. His personality became less intelligent and more feral. However, for the most part he remains as he was first designed.

In translating Chorakh to a 3D model, I took care to try to give him a scrawny, somewhat underfed look (though he seems to eat well enough to maintain some muscle). I gave his skin a sort of soft, mottled texture not unlike a frog's. I tried to add a bit of realism to his cartoony eyes by giving them a subtle gray-white border between black irises and black pupil, this inspired by the eyes of Great White Sharks. Attempting to maintain some of the cartoony look of his eyelids and their border with the eye socket, I constructed them separately. This last, however, I now consider a bit of a mistake, and wish I had constructed them as part of the face.

The origins of Grizella the hag I have already recounted. In her adaptation to 3D, I tried to retain and exaggerate her most pronounced features: her enormous eyes. Her eyelids I constructed to close over them like stretching dryer hoses. Her nose is a small, almost skeletal nub. I textured her face and hands with liver spots and dark, purple circles under her eyes. From her once-bright red and blue belt, now faded, hangs a dead frog. In general I sought to bring out her grotesque nature, to evoke both pity and revulsion. The latter serves to improve the audience's empathy with Chorakh, as

compared to her, he actually seems attractive. The former, along with her limping walk and generally mindless, wall-eyed stare, helps maintain some sympathy with the audience. Ultimately, however, I made her the way she is because she is a fun paradox of a character: ugly and cute, cunning and senile, vulnerable and powerful.

As for the supporting character, the Squirrel, he was based on a sketch I once did of a tap dancing squirrel, another unused suggestion for a classmate's thesis. For him I went with a stylized version of a gray squirrel, trying to match some of the more subtle color variations found in their fur. Ultimately his design requirements were fairly limited. I made sure he could wiggle his nose and snarl convincingly, and move his tail fluidly to really pull off "squirrelyness" (and also whip nicely as he sailed through the air)

Overall, I tried to balance my character design fairly evenly between stylization and realism. The color palettes I kept mostly bright and cartoony, but the color patterns I tried to base in nature. Anatomy varied widely in a character, usually fairly realistic in bodies, hands, and feet, but wildly exaggerated in faces.

Environment Design

Because my focus was on characters and character animation, environmental design was kept fairly simple. When I found myself bogging down when trying to work on it, I decided that, to start with, I would construct only the most essential elements (terrain and props that characters would interact with) and leave decisions about background foliage and the like until after animation was completed.

The basic set design I based loosely off of locations I knew growing up. Dry forest streambeds filled with fallen leaves and hidden caves under dead trees, my favorite "mysterious" places when I was a child, became the home territory of the goblin. Open

fields dotted with bushes became the “exposed” area where he ventured to steal the hag’s gem.

Chorakh’s titular “shinies”, on the other hand, are based mostly off historical objects. His cache includes the hilt of an old celtic sword, a celtic torq (neck ring), and ancient-looking coins, as well as bottle glass and horseshoe nails. Valuable or junk, it’s all the same to Chorakh as long as it’s shiny.

I had originally intended to have more detailed environments; to add undergrowth and brambles to the forest, and grass and other plants to the field. However, in the end I decided to keep the environments minimalistic, doing as much as possible with textures, and thereby allow as much time as possible for animation. Additionally, this helped with render times, which was good, as I did not have access to a render farm when the time came to begin rendering.

Animation

Animation, being my primary interest, naturally comprised a significant majority of the production time. While working, I strove to get inside the characters heads, to see the world as they saw it, and to keep in mind what they were up to, even if they weren’t currently on screen.

With Chorakh, I tried to emphasize his feral nature. While he tends towards fluid, almost graceful movements when stalking, I also tried to give him more animalistic traits as well, such as cat-like ear twitches when listening to something, and a lizard-like moment of tasting the air. Similarly, his large, floppy ears shift according to his mood. In general I kept his movements broad and dynamic, playing off his gangly physique.

In contrast, Grizella's movements are mostly twitchy and awkward, as least until she drops her façade. At an excellent bit of advice from Johnny Robinson, I gave her walk a pronounced limp, which nicely complements her appearance. Mostly she favors a wall-eyed stare, though when she wishes, she can look at things normally with her right eye. Her left, however, mostly twitches and drifts aimlessly and does not usually appear to be under her control.

Working on this project really drove home a number of animation principles for me. For those who are interested, I will expand on a few of the ones I found particularly important (and please bear with me if I drift a bit towards the technical).

First and most basic, keep your work organized and clean. This applies at all levels and goes a long way towards helping you keep a project under control. Keep your file names clear and easily organized. (Numbering them by sequence and shot worked best for me: e.g. Seq03_Scn15) Keep your files free of clutter; delete unnecessary objects, and group related objects such as a character's skinned geometry together. I highly recommend referencing your characters and environments into your animation scenes so that fixes to problems with them need only be done once.

This also applies to the process of animation itself. Block shots first, then go back and refine the animation. It's far easier to adjust timing before the motion becomes complicated. Add secondary animation only after you're reasonably certain the primary motion is complete and timed correctly. Rather than setting keys all over the place at random, I usually recommend keying the entire character's body at key poses, then going back and offsetting keys to create followthrough or adding extra keys to accentuate actions. This keeps most keys arranged into discrete groups, making adjustment easier,

and prevents accidental alteration of an important pose due to changes of keys earlier or later because you never actually keyed it at that moment.

Second, give your characters character. Never have your characters perform an action the simplest way. This is boring and a waste of a good opportunity to give them life and personality. Make them hesitate, twitch, or glance about. Add in glances to check footing, shift their grip on held objects, and have them look at interesting things they pass by. Shuffle their feet as they stand around. Whatever is appropriate to the character and scene. Don't be afraid to leap on those little things that occur to you once you've got a character in a situation. Some of my favorite moments in *Shinies*, such as the pinned squirrel defiantly clawing at Chorakh's arm, or the sleeping Grizella rolling an eye through a partly open lid, were completely unplanned, spur-of-the-moment elements that wound up changing the entire tone of a scene.

Third, secondary animation is your friend. Good secondary both accentuates a character's movement and adds a sense of real physicality to them. Even a fairly awkward bit of animation becomes much more convincing if the secondary motion reacts appropriately. While they do add extra work, I've always found that having some prop or appendage to get secondary motion on a character enhances that character's motion far beyond the effort required to animate it.

Finally, and most importantly, talk to your colleagues and classmate, and learn from them. Get feedback on your work, and pay attention to what it tells you. This doesn't mean that you have to follow every suggestion given, or design your film "by committee," but if you are consistently seeing people confused by something or losing

interest at a given point, its probably a sign that you should re-evaluate your decisions and see if there is a better way to handle it.

Post-Production

Editing and Compositing

Editing was an ongoing process throughout the film. Each time I finished a shot, I would produce a screen-captured “playblast” animation, and add it to the AfterEffects file in which I was assembling the film. This continuous process allowed me to better judge a shot’s role within the piece and spot incongruities and jarring transitions. Additionally, it laid the groundwork for final compositing,

Structurally, I stuck mostly to fairly standard editing rules, trying to get a good variety of shots and avoid 180° degree breaks and jump cuts as much as possible. Mindful of the tendency to do overblown camera moves in 3D films, I favored locked shots, using pans only where dramatically or mechanically necessary.

I did, however, try a bit of an experiment at the end of the 4th sequence. When boarding out the final stealing of the gem, I found that while I was having some success building tension in the lead up to the theft, I couldn’t come up with a way to actually show the theft and escape that didn’t seem anticlimactic. Ultimately, I decided to try to build up and exaggerate the tension, drawing out the final reach for the gem, until, in the moment just before Chorakh came into contact with it, I cut to black, hopefully startling and disorienting the audience and leaving them in a bit of suspense as to the outcome of the theft, before revealing the successful goblin racing back through the woods.

When rendering and compositing time came, I chose to have each element rendered out as its own pass, a technique that had had its usefulness impressed upon me

during my time at Red Eye Studios. This had a number of benefits. First, It allowed me more precise control when making changes in post. Each element could be color adjusted or otherwise modified independent of the rest, which came in particularly handy when I determined at the last minute that the green bottle glass was too similar to the green gem, and needed to be made blue instead. Second, if an element had lighting or other rendering issues, only it needed to be re-rendered, saving considerable time that would otherwise have been wasted rendering objects which needed no changes. Third, separating the various objects into different renders reduced the complexity of each file considerably, which was of particular benefit in the field scenes, where the sheer amount of alpha in the textures of all the bushes on screen at once would often crash my machine when I attempted to render them as one pass.

This also had an additional benefit. As I mentioned earlier, I tended to favor locked camera shots. This meant that most of the time, the sky, forest canopy, and many background objects (including the very render-intensive bushes) did not change at all over the course of a shot, and so could be rendered as a still frame and dropped in at their appropriate depth in the composition, saving vast amounts of render time.

Sound Design

Somewhat unusually for animation, all of the sound design, including the voice effects for characters, was done as the last step. Mostly this was because I had not made up my mind whether I wished to use mostly music or sound effects. In the end, however, I decided not to have any music and stick strictly to sound effects.

After showing some my film (sans sound) to a number of committee members, friends, and co-workers, I determined that there were a number of areas where people

were confused, either because something was not adequately shown, or because it was shown, but not sufficiently emphasized. Therefore, my primary goal for the sound track was to clear up these ambiguities.

One way I approached this was with the voice effects. When foley-ing in the character voices, I tried to draw attention to certain actions made by the characters. For instance, after her interaction with the squirrel, Grizella stands up and glances back down the path at the goblin before turning and walking down the path. Unfortunately most people didn't catch this subtle clue that she was more aware than she let on. When performing her voice, therefore, I tried to play this up, giving her an interested murmur during the glance, and then abruptly shifting to an exaggeratedly innocent hum as she turns away. Similarly, during her early scenes, she stops singing almost immediately after the goblin reveals himself, an even subtler foreshadowing that his presence does not go unnoticed.

Another way I addressed these issues was by adding additional environmental sound effects. Some of these, such as the singing that lures Chorakh from his lair, or Grizella's footsteps heard through the bush to which Chorakh listens to time his jump, were planned from the beginning. However, one major area of confusion, Grizella's use of magic, benefited from at least limited additions. I had always intended her magic to be subtle and understated, rather than flashy with lots of glitzy pyrotechnics. Therefore I settled on a sort of creepy wind effect to subtly highlight most of her supernatural tricks. Almost natural, but out of place in the largely windless background noises, I still tried to keep it from being too obvious until the end, where she reveals her true nature to the goblin.

The attention given to the sound was not limited to reinforcing plot points, however. When establishing the audio for the film, I set out to create a number of distinct sound-spaces to help set the tone for each of the areas in the film. The forest, of course, had a baseline of soft rustling leaves, to which I added a singing bird and a woodpecker. Near Chorakh's lair I envisioned it as being swampier, so I at that location added in a croaking frog. I also added a rather discordant wind chime to represent his hanging nails. This last element also served as a symbol of home and safety for Chorakh, and was deliberately faded out during the shots where he was particularly menaced by Grizella near the end of the film. The field, by contrast, was filled with buzzing insects and singing birds, as well as a number of crickets. To this, I occasionally added the cry of a distant hawk, which partly served to represent Chorakh "on the hunt."

In the end, I feel that the attention paid to the sound was definitely worth it, as it really pulls the piece together for me. What I had felt as a bit of an overlong, rambling, and slightly confusing work became a complete, integrated film, which, to my surprise, I really enjoyed, despite having worked so long on it.

Reflections

The Screening

In spite of my newfound enjoyment of my film, I was still painfully aware of its shortcomings. The environments were far sparser and more crudely constructed than I would have liked, and I had not been able to devote as much time to tweaking the lighting as I felt it really needed. Overall, while I felt it was a good effort, I felt it didn't quite live up to the standards I set for myself. Therefore, I was surprised and extremely pleased with how well it was received. Despite some legitimate criticism of some poorly thought

out color palette choices and a bad guess as to the best saturation level for projection, the response was overwhelmingly positive. People seemed to appreciate the effort put into the animation and sound design, and agree with the wisdom of focusing my energy on the aspects of production that most interested me, rather than trying to give equal time to everything and spreading my work too thin.

Conclusion

Looking back at Shinies now that its finished, I'd say that, despite all difficulties and interruptions, I feel that I've made something I can be legitimately proud of, in spite of any flaws it might have. It has been an invaluable learning experience, as well as a chance for personal growth, and, I think, a fitting capstone for some of the happiest and most interesting years in my life. I want to take this opportunity to once again thank my ever-patient committee members, and my family and friends who pushed me to get back to work and finish in spite feeling disheartened and intimidated. Without you all, I would never have gotten here.

Appendix A

Proposal for an MFA Thesis Project

Untitled
by
Seth McCaughey

MFA Imaging Arts/Computer Animation
SCHOOL OF FILM AND ANIMATION
ROCHESTER INSTITUTE OF TECHNOLOGY
ROCHESTER, NEW YORK
May, 2001

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Associate Professor
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Assistant Professor
School of Film and Animation

In the old forest, not far off the old abandoned road, among the gnarled roots of a long dead tree stump, lives Chorakh the goblin. One day, while resting in his home, he hears a strange clanking sound. Curious, he decides to investigate. He scrambles over the bank and peeks out onto the road. Down the ancient wheel-ruts stumbles a scrawny, bedraggled peasant man, pulling his handcart loaded high with goods behind him. As he draws even with Chorakh, he encounters a muddy area. The peasant struggles through, but his cart becomes stuck. Stubbornly, he tries to keep going, but succeeds only in dislodging part of the load. He straightens up and looks about as if noticing his surroundings for the first time. He shivers nervously a bit, and quickly goes about picking up the fallen items. Chorakh eyes the cart, then rubs his chin, and the beginning of a sadistic grin tugs at the corners of his mouth. Stealthily he begins to move towards the cart.

The peasant continues gathering his fallen wares. Behind him, Chorakh leaps onto the cart, snatches an item, and runs back to the cover of the ferns lining the road. Hearing the sounds coming from behind him, the peasant turns around in surprise, but finds nothing there. Back in the ferns, Chorakh grins with feral glee and examines the item he has taken. After a moment, however, his smile fades, as he realizes the item is worthless. He throws it down in disgust, and sneaks back out onto the road. The peasant continues gathering items. Behind him, Chorakh stealthily searches the cart. Finding a small sack, he quickly flees back out of sight. Once again, the peasant hears him but turns too late.

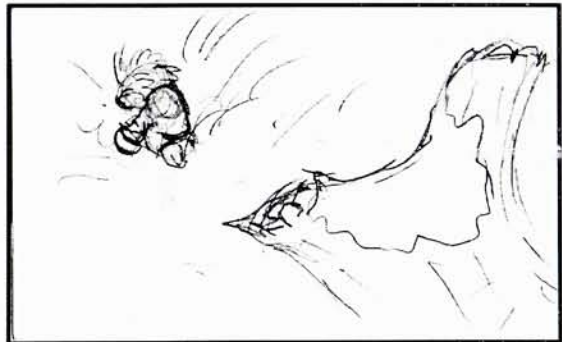
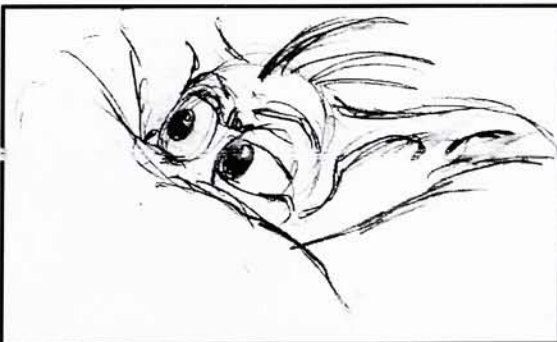
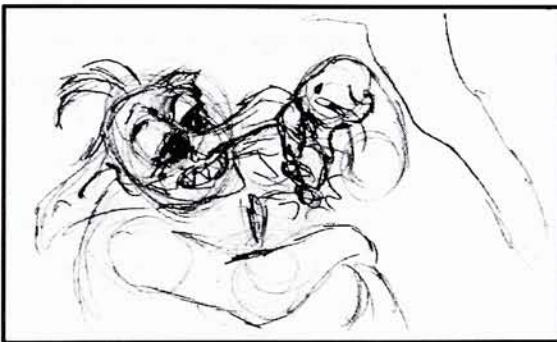
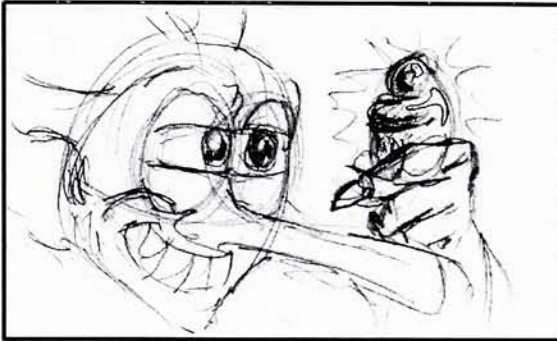
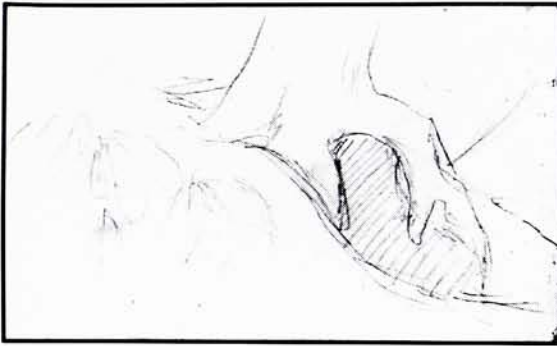
Grinning in anticipation, he reaches into the sack, but pulls out only a loaf of bread and a wedge of cheese. Even more frustrated, he eyes them for a moment, then savagely takes a bite out of the bread and ventures out again. Spotting a few items that fell off further back, the peasant goes to retrieve them as well. Meanwhile, Chorakh climbs around from the far side of the cart. Taking another bite of the bread, he resumes his searching. After a moment, he draws out a locket on a chain. With a grin he eyes the locket appreciatively and lets out a gleeful cackle. Hearing this, the peasant freezes, dropping most of the items he has gathered on this side, but managing to cling to the last item he picked up, a small woodsman's axe. He stands, frozen, for a moment, then quickly turns around. There, perched on top of the cart, still eyeing the locket, is Chorakh. Suddenly, Chorakh notices the peasant staring at him. They eye each other for a moment. Then Chorakh grins and glances at the locket.

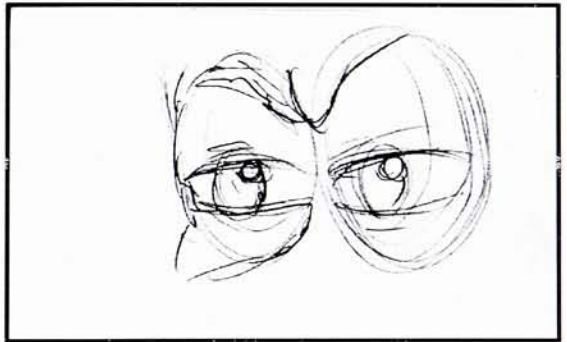
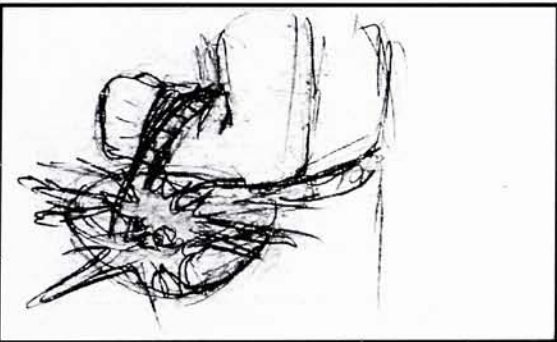
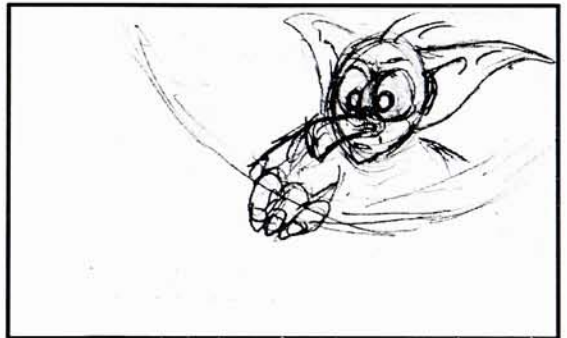
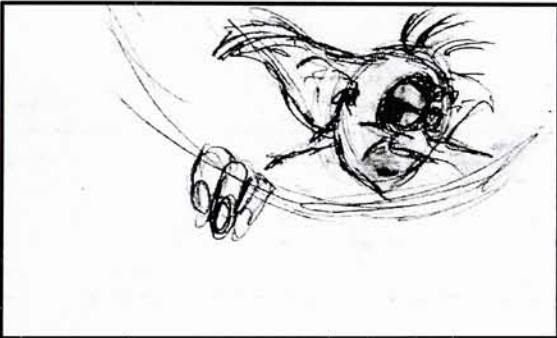
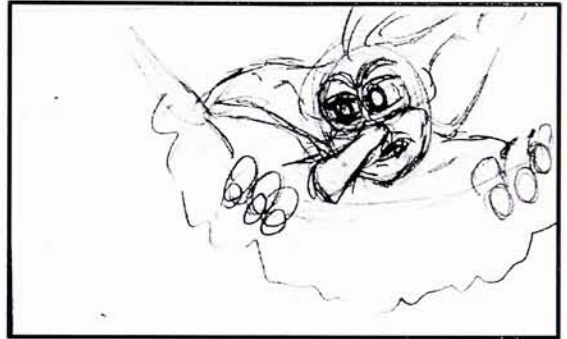
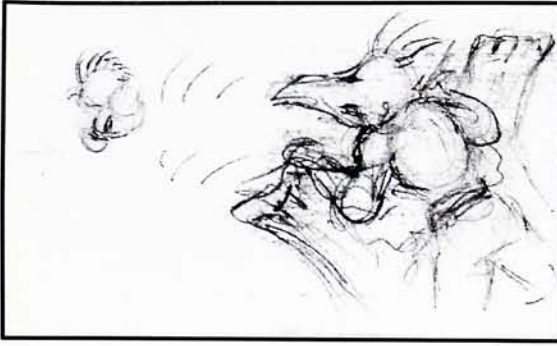
The peasant trembles in fear, then stops as he notices the locket. His hands tighten on the axe handle. He raises it above his head, and with a bellow, charges the goblin. Startled, Chorakh jumps backwards, easily avoiding the clumsy blow. The peasant swings at him again, and winds up pursuing the gleefully cackling goblin around his cart and off into the forest. Chorakh ducks through roots and around trees, easily avoiding the peasant. As he runs, Chorakh looks back and laughs mockingly, only to run headlong into a particularly low-hanging tree branch, knocking himself unconscious.

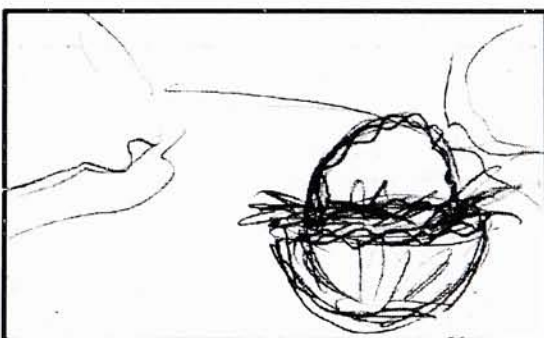
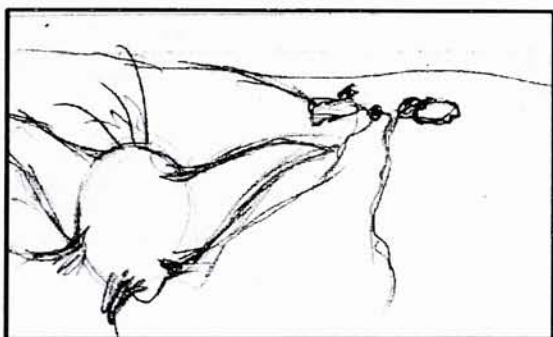
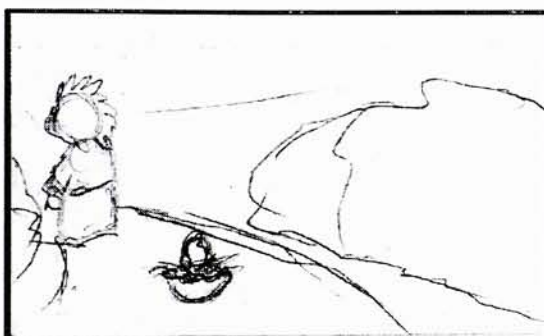
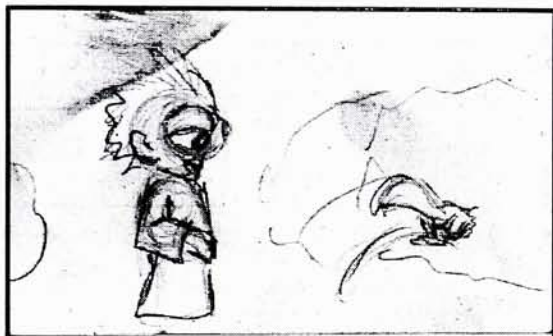
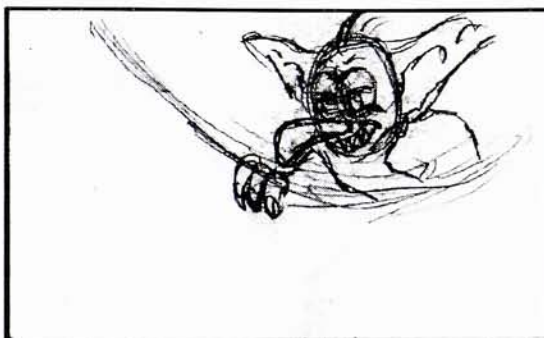
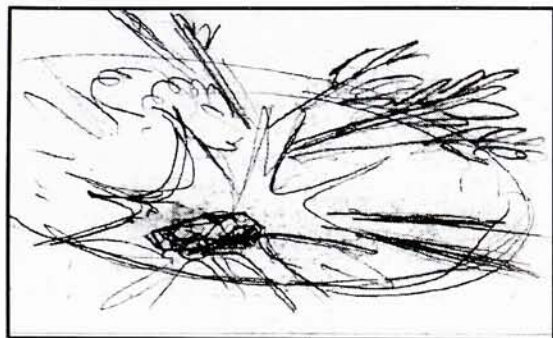
Chorakh regains consciousness to find himself bound and hitched up to the peasant's cart. He struggles to free himself and snarls in frustration. Behind him, the peasant grins and laughs. Chorakh struggles harder, but eventually gives up. Then the peasant uses a switch to goad the goblin.

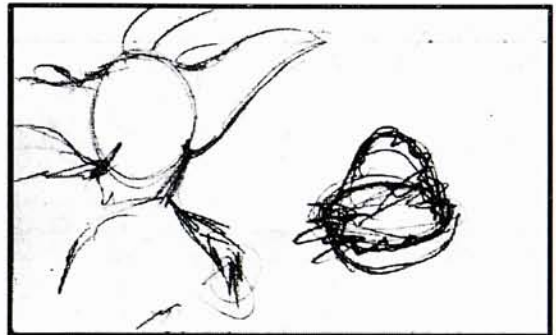
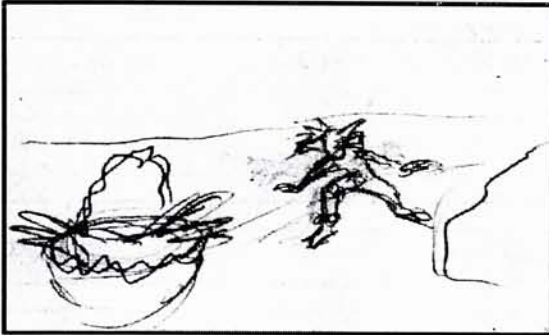
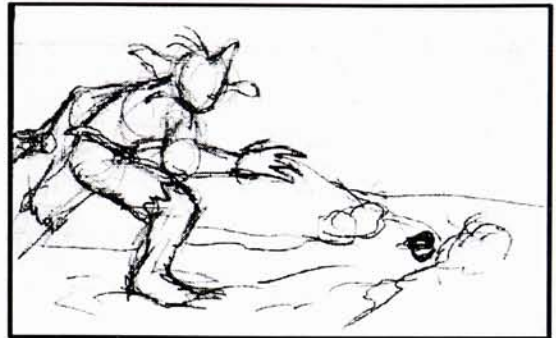
Eventually Chorakh comes up with a plan to outwit the peasant and escapes, managing to snag a bit of "treasure" in the process.

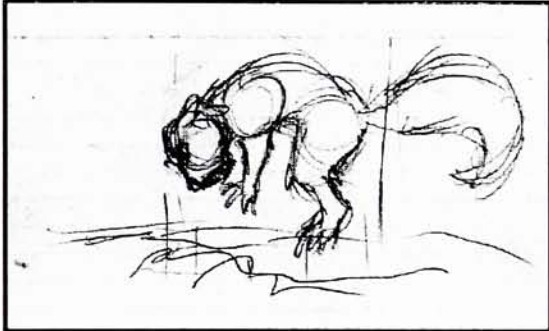
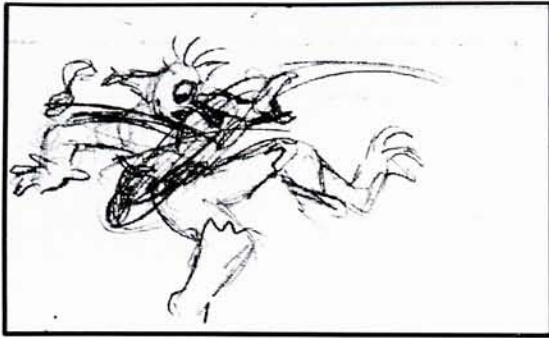
Appendix B

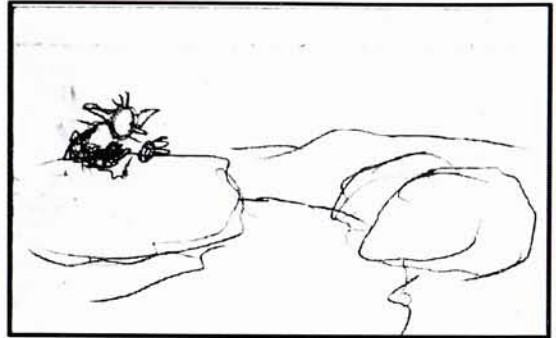
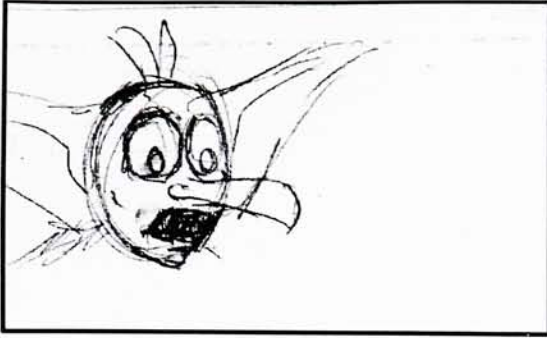












Appendix C









